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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,838	03/19/2004	Lewis S. Waybum	18197/09011	7540

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EXAMINER

ZEC, FILIP

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/804,838

Applicant(s)

WAYBURN ET AL.

Examiner

Filip Zec

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/30/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6, 8-12, 21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,184,504 Cardella. In FIG. 1, Cardella describes the invention as claimed by the applicant: an apparatus and a method for controlling the temperature of an electronic device (40), comprising a thermal head (25), said thermal head having an inlet (140, FIG. 3) and an outlet (145, FIG. 3), defining a partially open flow channel between them (see FIG. 3), a refrigeration system defining a flow loop (135 and 165, FIG. 2b), a detachable (col 3, lines 55-64) connection mechanism (15 and 105), comprising a first inlet connector (165, FIG. 2b) located upstream of said thermal head (see FIG. 2b) and a second outlet connector (175, FIG. 2b) located downstream from said thermal head (see FIG. 2b), a first shutoff, fluid-flow regulating valve (170) located between said refrigeration system and said inlet (see FIG. 2b), a second shutoff, fluid-flow regulating valve (not numbered, taught in col 7, lines 30-46) located between said refrigeration system and said outlet (see FIG. 2b) and control means for operating said valves (115). Per claims 10 and 11, it is inherent to a refrigeration system employing a fluid refrigerant to use control valves as means to preserve and optimize the refrigerant usage to its maximum capacity.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 7, 13-16, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,184,504 Cardella in view of U.S. Patent 6,334,311 to Kim et al. Cardella discloses applicant's basic inventive concept, an apparatus and a method for controlling the temperature of an electronic device, substantially as claimed with the exception of specifying the use of a compressor and a condenser in the refrigeration loop, the vacuum pump located between the second shutoff valve and the inlet, said pump being in fluid connection with the refrigeration loop and the use of a second thermal head. Kim shows a compressor and a condenser (col 2, lines 42-58) in the refrigeration loop (100, FIG. 6) and a vacuum pump being in fluid connection with the refrigeration loop (col 2, lines 18-25) to be old in the refrigeration art. Since the vacuum pump is used to create the vacuum in the thermal head area, it would be necessary to have it before the second valve, which controls the fluid flow back to the refrigeration system loop. Finally, since the thermal head can be detached from the surface of the testing device, it would be obvious to one having ordinary skill in the art at the time the invention was made to replace it after signs of wear and tear. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Kim to modify the system of Cardella and use a compressor and a condenser in order

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to provide the cold refrigerant to the cooling loop and the thermal head and to have the vacuum pump in order to create vacuum in the sealed space of thermal head (col 2, lines 20-22).

5. Claims 4, 5, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,184,504 Cardella in view of U.S. Patent 6,334,311 to Kim et al. as applied to claims 1, 2, 3 and 16 above, and further in view of U.S. Patent 5,778,969 to Kyung et al. Cardella in view of Kim discloses applicant's basic inventive concept, an apparatus and a method for controlling the temperature of an electronic device, using two metering shutoff valves, substantially as claimed with the exception of specifying the use of a third shutoff valve. Kyung shows a system using a third shutoff valve (67, FIG. 8) to be old in the refrigeration art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Kyung to modify the system of Cardella in view of Kim to have a third shutoff valve in order to prevent the generation of foreign particle laden flow since fluid flow in the thermal head chamber generates a viscous flow at the time of initial vacuum in thermal head chamber (col 6, lines 43-46).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,184,504 Cardella in view of U.S. Patent 6,334,311 to Kim et al. as applied to claims 13-15 above, and further in view of U.S. Patent 5,198,752 to Miyata et al. Cardella in view of Kim discloses applicant's basic inventive concept, an apparatus and a method for controlling the temperature of an electronic device, substantially as claimed with the exception of specifying the use of dry gas in fluid communication with the cooling system. Miyata shows a source of dry gas (col 4, lines 12-14) in fluid communication with the cooling system to be old in the refrigeration art. Therefore, it would have been obvious to one having ordinary skill in the art at

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the time the invention was made from the teaching of Miyata to modify the system of Cardella in view of Kim and use dry gas in fluid communication with the cooling system in order to prevent dew from forming on the object causing the cooled apparatus to be frozen (col 4, lines 15-17).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,104,204 to Hayama, Hisao et al. teaches a semiconductor device testing apparatus.


U.S. Patent 6,424,141 to Hollman, Kenneth F. et al. teaches a wafer probe station.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (571) 272-4815. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Filip Zec
Examiner
Art Unit 3744
CHERYL TYLER
SUPERVISORY PATENT EXAMINER

FZ